

The SKIMMER

News of the Delaware National Estuarine Research Reserve



Volume VII, No. I
Spring 2002

MESSAGE FROM THE RESERVE MANAGER

The Delaware National Estuarine Research Reserve (DNERR) is one of 25 designated reserves across the country.

The program is a federal-state partnership whose goal is to establish, protect and manage natural estuarine habitats for research and education.

Delaware's Reserve consists of two components, the St. Jones River and Blackbird Creek.

These sites include both brackish and fresh water estuaries and represent the diverse estuarine ecosystems found throughout the Mid-Atlantic.

Dear friends,

Spring is fast approaching and the Reserve is becoming increasingly active with preparations for what will be our busiest field season to date. There is a plethora of studies that will be conducted this year. To name a few, the Reserve will be involved with ROXANN underwater mapping, horseshoe crab /shorebird monitoring, water quality monitoring and atmospheric deposition sampling for nitrates and pesticides.

Sound interesting? How would you like to become a part of some of these projects?

Currently, we are building a database of volunteers who would like to assist with this

year's research. The horseshoe crab/shorebird researchers will be conducting a spawning survey again this year and it won't be possible without your help. Volunteers from the previous survey all agreed it was an interesting and rewarding project. If I've piqued your interest, give us a call and let us know that you would like to be put on the list. We will be holding a training session for all volunteers in April.

If you have a green thumb our native plant nursery could use some TLC. The Delaware Native Plant Society maintains a small nursery at the St. Jones Reserve. All plants are grown for the purpose of repopulating Delaware with native species. The nursery has had some

improvements over the Winter. A fence has been added to help cut down on predation of small plants, and educational signs have been ordered. The nursery is open to anyone interested so on your next visit take a walk through.

I've highlighted only a couple of activities and projects happening this spring. If you want to learn more please pay us a visit.

Mark Del Vecchio



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EDUCATING COASTAL DECISION-MAKERS

On January 8, 9, and 10th, the DNERR hosted a workshop in conjunction with NOAA's Coastal Services Center entitled "Navigating in Rough Seas: Public Issues and Conflict Management." Employees of the Delaware Department of Natural Resources and Environmental Control, the Nature Conservancy, University of

Delaware College of Marine Studies, and the Mid-Atlantic Fishery Management Council attended in the hopes of becoming better facilitators. This Coastal Decision-Maker Workshop was designed for extension, education, and management professionals who deal primarily with coastal and ocean issues. Meeting management and facilitation

skills are becoming increasingly important for extension and education staff. It is essential that they make the most of their limited and valuable time, and planning and conducting meetings efficiently is one important means to this end. The overall goal of the workshop was to

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SPRING 2002 PROGRAMS AT THE RESERVE

Canoe the St. Jones
April 4

Estuary Explorers
April 2, Grades 1-4
April 3, Grades 5-8

***Horseshoe Crab:
The Ancient Mariner***
May 7

Owl Prowl
March 15

Preschool Naturalist
March 26, April 23,
May 28

***St. Jones River
Boat Trips***
April 18, April 27

The Shorebird Connection
May 20

For more information and
registration call
(302) 739-3436

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EDUCATION COORDINATOR:
Katy Dulin

CONSERVATIONIST:
Wes Conley

ESTUARINE EDUCATOR:
Kate Marvel

RESEARCH TECHNICIAN:
Mike Mensinger

INTERN:
Heather Hudson

MEET THE RESERVES

Beginning this issue, we will highlight the other Reserves in the NERR System in each publication of the Skimmer. To hit it off, we're going to start at the southern most Reserve, Jobos Bay, in Aguirre, Puerto Rico! Mark, Katy, Bob, and Wes visited Puerto Rico in October for the 2001 NERRS National Conference and had a wonderful experience there.

In 1899, the Aguirre Sugar Plant Mill was established on the west side of Jobos Bay. This industry was the beginning of the growth of an independent town with its own history. Attracted by its magnificent port, other industries such as oil refineries, thermoelectric plant and pharmaceuticals were established in the area. By 1980, the Aguirre Sugar Corporation had ceased operating and was in the process of liquidation. The Corporation approached the National Oceanic and Atmospheric Administration with an offer of 1,205 acres of estuarine property known as the Lugo Viñas farm. It is this property that is now known as the Mar Negro mangrove forest. Cayos Caribe were added to the property upon designation.

Jobos Bay NERR was designated in 1981 and is administered at the state level by the Puerto Rico Department of Natural and Environmental

Resources under the Coastal Zone Management Program. It is located on the southern coast of Puerto Rico, about one and a half-hours south of San Juan, in the tiny town of Aguirre. The Reserve consists of 2,883 acres of mangrove forest and freshwater wetlands. This includes fifteen tear-shape islets known as Cayos Caribe, fringed by coral reefs and seagrass beds, with small beach deposits and upland areas. The Reserve also includes the Mar Negro (Black Sea) area which consists of a mangrove forest and a complex system of lagoons and channels interspersed with salt and mud flats. Freshwater wetlands and subtropical dry forest vegetation are found on the northern island boundaries. The JBNERR Center was once the old Club House of the Aguirre Hotel and now consists of an administrative office, an

information center, a conference and exhibit area, and a laboratory facility for researchers.

The West Indian manatee is known to forage within the Jobos Bay and Mar Negro area. Hawksbill sea turtles have been seen near the seagrass beds. Mar Negro serves as nesting grounds for native and migratory birds such as, the yellow-shouldered blackbird, the brown pelican, and various wading birds.

We are grateful to the JBNERR for hosting the 2001 National Conference and for giving us the opportunity to visit an estuarine area quite different from our own.

Katy Dulin



LEFT TO RIGHT : MARK DEL VECCHIO, WES CONLEY, KATY DULIN, AND BOB SCARBOROUGH IN FRONT OF THE JOBOS BAY NATIONAL ESTUARINE RESEARCH RESERVE CENTER IN AGUIRRE, PUERTO RICO.



FRIENDS OF THE RESERVE

The Friends welcomed Dr. Mike Reiter from Delaware State University to their meeting on January 17th. He spoke about the cooperative efforts that the Reserve and DSU will be engaging in over the next several years as a part of a larger project involving several other Land Grant Universities. He will be working to develop environmental indicator models for the St. Jones Watershed. Business meeting topics included adopt-a-highway, and spring events planning. The Friends will be hosting a variety of guest speakers in the coming months and a St. Jones canoe trip open only to Friends will be held in the Spring. ***The February meeting of the Friends has been cancelled.*** The next meeting will be March 21st. Anyone interested in learning more about the Reserve, becoming involved in the research projects or enjoying the beauty of the St. Jones is welcome to attend.

UPCOMING MEETINGS

***MARCH 21, "MIGRATORY SHOREBIRD ECOLOGY AND RESEARCH"**

APRIL 18, "HORSESHOE CRAB ECOLOGY AND RESEARCH"

MAY 16, "INTERNATIONAL SHOREBIRD TEAM PICNIC"

2001 ACCOMPLISHMENTS

This past year was a year of promising growth for the DNERR program. Listed below are just some of the highlights of 2001.

Reserve Management

Over 1500 persons utilized conference space. Four new exhibits were installed at the St. Jones Reserve including a bay aquarium. The Delaware Native Plant Society was given a plot of land to use for their native plant nursery. The "Friends of the St. Jones Reserve" met for business meetings and lectures, adopted a highway, and conducted horseshoe crab spawning surveys. The Reserve Manager served on the Education & Outreach Implementation Team of DNREC's Biodiversity Conservation Partnership.

Research

A partnership with Delaware State University was initiated to develop a proposal and participate in the Environmental Cooperative Science Center (ESCS): Regional Studies in the Sustainable Management of Coastal and Marine Habitats for Decision-Making. Research staff worked closely with the University of Delaware's College of Marine Studies to determine the underlying causes and circumstances that would cause fish kills and overall degraded water quality in the Inland Bays. The DNERR served as the base of



St. Jones Reserve's new bay aquarium

operations and center of coordination, and partial funding source, for numerous research projects to gather valuable information on horseshoe crabs, shorebirds, and their close relationship. Logistics, equipment, and sites were provided for a University of Delaware course used to acquaint environmental science students with many aspects of environmental fieldwork. The Research Coordinator served on TMDL and other water quality workgroups and served as a technical expert for the NERRS SWMP meteorological component.

Education

Over 4,500 school children were served through educational outreach and field trip experiences. Fifty-eight seasonal public programs were held. Education staff participated in such public

events as the Delaware Envirothon™, College of Marine Studies Coast Day, National Estuaries Day, Delaware State Fair, and the Delaware Water Festival. The Education Coordinator assisted in the development and delivery of Green Eggs and Sand: The Tri State Horseshoe Crab/Shorebird Education Project. Three Coastal Decision-Maker Workshops were held with topics about conservation cost share, Delaware's energy needs, and the Roxann Seabed Classification System. A Request for Proposals was posted for a market analysis to begin the Coastal Training Program. Three teacher in-service training days were hosted.

Katy Dulin

es-tu-ar-y (ēs'chōō-ēr'ē) n., pl. es-tu-ar-ies. 1. The part of the wide lower course of a river where its current is met by the tides. 2. An arm of the ~~SEA~~ that extends inland to meet the mouth of a river.

EDUCATING COASTAL DECISION-MAKERS, CON'T

increase extension and education professionals' ability to design, conduct, and control meetings in public forums on topics that may potentially be controversial and in such a manner as to ensure a cooperative and participatory outcome. Many thanks to Lynne Hinkey and Laura Cantral of the Coastal Services Center who did a wonderful job presenting the course material!

On Saturday, January 12th, representatives from Kent County Levy Court and

Regional Planning Commission met at the St. Jones Reserve to learn about growth issues and land use planning in the St. Jones Watershed. "Smart Growth: Issues in the St. Jones Watershed" was the first in a series of training programs for land-use officials. Connie Holland of the State Office of Planning Coordination began the workshop with an overview of the Governor's Livable Delaware Initiative. As quoted from Governor Minner's announcement of her Livable Delaware agenda in March of 2001, Livable Delaware "...is

a comprehensive strategy to get sprawl under control and direct intelligent growth to areas where state, county and local governments are most prepared for the new development in terms of infrastructure, services, and thoughtful planning." The economic impacts of Eco-tourism were presented by Joe Matassino of the Partnership for the Delaware Estuary. He discussed how Eco-tourism could be used to both benefit local communities through increasing economic gain and increase awareness and conservation of natural areas.

Carl Solberg, Assistant Director of Kent County Community Services/Parks Division, gave an update of the St. Jones River Greenway Enhancement Area and Silver Lake Watershed Overlay District Ordinances. These efforts make an attempt to protect valuable environmental resources while allowing for community growth. The afternoon culminated with aerial tours of the St. Jones Watershed to view current land use practices and conservation efforts.

Katy Dulin

A PAGE FROM THE NATURALIST'S NOTEBOOK

When you think of Springtime you think of warmer days with light rain, flowers beginning to bloom and the sighting of the first robin. As you take off your winter coat and take evening strolls you also become aware that Spring also brings nature's chorus...that is the chorus of frogs! One of the first calls of the spring is that of the Spring peepers (*Pseudacris crucifer*) calling.

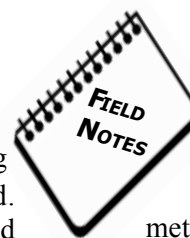
Distribution: Although more often heard than seen, Spring peepers may be found at the edges of seasonal ponds in woodland areas and range from Nova Scotia, Canada to the Gulf of Mexico.



General Description: The spring peeper is one of the smallest frog species in Delaware. They range in size from $\frac{3}{4}$ of an inch to 1 and $\frac{1}{2}$ inches in body length. Their color varies from yellow, olive, and gray to various shades of brown and have sticky pads on their clawless unwebbed toes. Their most distinctive feature is a dark imperfect "X" found on their back as well as random dark dashes found on its body. Females are normally lighter in coloration and larger than their male counterparts. Only the

male spring peeper calls, trying to attract females to breed. Their call is easily recognized and when several are calling the sound has been said to resemble sleigh bells. In general the call is a distinctive high piping "peep peep peep", much like a baby chick.

Life History: Spring peepers are nocturnal and rarely seen except during breeding season. Spring peepers are heard and breeding begins early in the spring. Eggs are usually laid by the female attached to underwater objects. Each female can lay between 900-1,000 eggs. They live as tadpoles between 90-120 days in the ponds and then



metamorphose into an adult. Spring peepers feed on small soft-bodied invertebrates such as small spiders, moth larvae and water midges. Their main predators include other frogs, fish, raccoons, turtles and wading birds. Spring peepers, like all frogs, are cold blooded and they go into hibernation on land in the winter when the temperature drops too low for their bodies to function.

Kim Cole
Environmental Scientist
Delaware Coastal
Programs



ENVIROTHON™



2001 Delaware ENVIROTHON™
team courtesy of Pat Crowe

The first Delaware ENVIROTHON™ was held in the spring of 1996 and since then the DNERR has been directly involved in its planning. ENVIROTHON™ is a problem solving, natural resource education program for students in grades 9-12. Each team consists of 5 students and an advisor. The teams test their critical thinking skills, areas of environmental issues, and teamwork in 5 categories: Aquatics, Soils, Forestry, Wildlife, and Current Environmental Issues. The competition consists of written questions and hands-on work in the field. Each team also has to give an oral presentation on a topic provided to them several days prior to the competition.

The ENVIROTHON™ concept began in Pennsylvania in 1979 as an outgrowth of a vocational agricultural land-judging contest. By the mid 80's New York, Ohio, Massachusetts, and Maine had their own state ENVIROTHON™ programs. In 1988, the first National ENVIROTHON™ was held in Pennsylvania and had 5 states participate. The mission of ENVIROTHON™ is to develop knowledgeable, skilled and dedicated citizens who are willing to work towards achieving and maintaining a natural balance between the quality of life and the quality of the environment. This is accomplished by developing in many young people an understanding of the principles and practices of resource management and ecology through practice dealing with complex resource management decisions. Currently the program is active in over 30 states/provinces and is growing each year. In Delaware many state, private and federal agencies work together to help train the advisors and the teams. DNERR staff serves on both the Aquatics and Planning Committees. Workshops are

held throughout the year in each of the categories to help train the teams. Resource Trunks are available in each of the three Conservation District offices. Advisors also have access to Resource Notebooks to aid in the training process.

The Delaware 2002 ENVIROTHON™ will be held on Friday May 3rd in New Castle County, site to be announced. On the day of the state competition, teams and advisors arrive at a designated site to explore the 5 natural resource categories. On this day they will test their creativity, analytical thinking, and team building skills in a competitive format. The state competition is the 'day-in-the-field' where each team visits the 5 testing stations. These areas, again, are Aquatics, Forestry, Soils, Wildlife and this year's current environmental issue, Biodiversity. The Oral Presentations are held inside a facility when possible depending on the site of the competition. As the teams arrive the day of the competition they register and are assigned a rotation of each of the sites. At each of the designated areas they are provided with an overview of the station and instructed to provide one collective answer on the answer sheet they are then provided with. All the stations are staffed by those who have helped prepare the test questions in their field. At

each of the stations they are generally given 20-25 minutes. As the team completes the site they turn in their written answer sheet which in turn is taken to another location to be graded.

After each team has completed all areas of competition they have lunch and anxiously await the test results. After the scoring is completed all participants assemble for the awards presentation. There are awards for each category and the winner is the team with the most accumulated points in each of the categories. At this time they are awarded plaques, a hand painted tile depicting the current issue category, jackets and other goodies. They have a picture taken and immediately begin planning for the National Competition that will take place during the summer. The 2002 National Envirothon™ Competition will take place at The Hampshire College in Amherst, Massachusetts from July 9 through August 4, 2002. Congratulations to the 2001 Delaware winners from Polytech High School!

Kate Marvel



A NEW PARTNERSHIP PROJECT

The Delaware National Estuarine Research Reserve and the Delaware Coastal Management Program have teamed up with The Nature Conservancy to conduct an innovative horseshoe crab research project this spring.

The purpose of this study is to determine whether spawning horseshoe crabs exhibit a preference for certain beach conditions such as sediment type. Approximately 2,000 cubic

yards of coarse-grained sand will be placed on portions of Bowers Beach to replicate beach conditions thought to be optimal for horseshoe crab spawning.

Horseshoe crab spawning activity and egg density will be monitored on both the newly created coarse-grained areas and the existing finer-grained areas and at reference beaches nearby. Results of this study may help coastal managers determine beach replenishment

design criteria that will both protect beaches and homes from erosion and enhance habitat for spawning horseshoe crabs.

*Susan Love, Planner
Delaware Coastal Programs*

